BYRNELOOBY
AN AYESA COMPANY

Trial Pitting Photo Sheet

C
D B
A

TP01

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP01
Face C

TP01
Face B

TP01
Face B – Close up

TP01
Face D

BYRNELOOBY
AN ayesa COMPANY

Trial Pitting Photo Sheet

C
D B
A

TP04

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP01
Base of pit.

TP01
Close up of base.

TP01
Spoil heap.

BYRNELOOBY
AN ayesa COMPANY

Trial Pitting Photo Sheet

C
D B
A

TP04

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP04
Face C

TP04
Face B.

TP04
Base of pit.

TP04
Spoil heap.

BYRNELOOBY
AN ayesa COMPANY

Trial Pitting Photo Sheet

C
D B
A

TP01

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP04
Spoil heap- close up of clay.

TP04
Spoil heap- close up of natural gravel.

TP04
Spoil heap- close up of gravel (made ground).

TP04
Spoil heap- close up of geotextile layer.

BYRNELOOBY
AN AYESA COMPANY

Trial Pitting Photo Sheet

C
D B TP05
A

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP05
Face C

TP05
Face C

TP04
Base of pit.

BYRNELOOBY
AN ayesa COMPANY

Trial Pitting Photo Sheet

C
D B
A

TP05

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP05
Close up of spoil heap.

TP05
Spoil heap.

TP04
Base of pit.

BYRNELOOBY
AN ayesa COMPANY

Trial Pitting Photo Sheet

C
D B TP06
A

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP06
Trial pit and spoil heap.

TP06
Face B.

TP06
Face D.

BYRNELOOBY
AN AYESA COMPANY

Trial Pitting Photo Sheet

C
D B TP06
A

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP06
Base of pit and collapse.

TP06
Base of pit.

TP06
Face D.

TP06
Spoil heap.

BYRNELOOBY
AN ayesa COMPANY

Trial Pitting Photo Sheet

C
D B
A

TP07

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP07
Pit and spoil heap.

TP07
Face C.

TP07
Face B.

BYRNELOOBY
AN AYESA COMPANY

Trial Pitting Photo Sheet

C
D B TP07
A

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP07
Face D and spoil heap.

TP07
Face D.

TP07
Spoil heap.

TP07
Face B.

BYRNELOOBY
AN ayesa COMPANY

Trial Pitting Photo Sheet

C
D B
A

TP08

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP08
Face C and spoil heap.

TP08
Face B.

TP08
Face A and base.

BYRNELOOBY
AN ayesa COMPANY

Trial Pitting Photo Sheet

C
D B TP08
A

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP08
Spoil heap.

TP08
Spoil heap- close up.

TP08
Spoil heap- close up

BYRNELOOBY
AN AYESA COMPANY

Trial Pitting Photo Sheet

C
D B
A

TP09

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP09
Trial pit and spoil heap.

TP09
Face C.

TP09
Face B.

BYRNELOOBY
AN AYESA COMPANY

Trial Pitting Photo Sheet

C
D B TP09
A

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP09
Face D.

TP09
Face A.

TP09
Soil heap.

TP09
Spoil heap- close up.

BYRNELOOBY
AN AYESA COMPANY

Trial Pitting Photo Sheet

C
D B TP10
A

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP10
Trial pit and spoil heap.

TP10
Face C and B.

TP10
Face A- close up.

BYRNELOOBY
AN ayesa COMPANY

Trial Pitting Photo Sheet

C
D B TP10
A

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP10
Face B.

TP10
Face D.

TP10
Spoil heap.

TP10
Spoil heap- close up.

BYRNELOOBY
AN ayesa COMPANY

Trial Pitting Photo Sheet

C
D B TP12
A

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP12
Face C and D.

TP12
Face B and C.

TP12
Face D and spoil heap.

BYRNELOOBY
AN ayesa COMPANY

Trial Pitting Photo Sheet

C
D B TP12
A

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP12
Face B.

TP12
Face C and black polyethene pipe (land drain).

TP12
Face B, C and black polyethene pipe (land drain).

TP12
Spoil heap.

BYRNELOOBY
AN ayesa COMPANY

Trial Pitting Photo Sheet

C
D B TP13
A

Project name:	Project No:	Ground Level (mAOD)	Start Date	
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**	
Client:	Easting (OS mE)	Northing (OS mN)	End Date	
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**	**Sheet 19 of 23**

TP13
Face C and spoil.

TP13
Face B.

TP13
Base of pit.

BYRNELOOBY
AN AYESA COMPANY

Trial Pitting Photo Sheet

C
D B TP13
A

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

TP13
Base of pit.

TP13
Base of pit- close up.

TP13
Spoil heap.

TP13
Spoil- close up.

BYRNELOOBY
AN ayesa COMPANY

Trial Pitting Photo Sheet

C
D B SA01
A

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

SA01
Pit and spoil.

SA01
Face C and B.

SA01
Face D.

BYRNELOOBY
AN AYESA COMPANY

Trial Pitting Photo Sheet

C
D B SA01
A

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

SA01
Face A.

SA01
Spoil.

SA01
Spoil- close up.

SA01
Soakaway set up.

AGS
Suite 104
Mere Business Park
Leaside
Saint Helens
WA(5GG

Unless otherwise stated:
Depth (m), Diameter (mm),Time (hhmm), Thickness (m), Level (mOD).

Equipment Used	Contractor	Logged By	Checked By
JCB 3CX	**Hurts Plant Hire**	**OS**	**NR**

BYRNELOOBY
AN AYESA COMPANY

Trial Pitting Photo Sheet

C
D B SA01
A

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

SA01
After backfill.

AGS Suite 104 Mere Business Park Leaside Saint Helens WA(5GG

Unless otherwise stated:
Depth (m), Diameter (mm),Time (hhmm), Thickness (m), Level (mOD).

Equipment Used	Contractor	Logged By	Checked By
JCB 3CX	**Hurts Plant Hire**	**OS**	**NR**

Appendix I – Window Sampling Logs, Rig Calibration Certificate and Fieldwork Photographs

Dynamic Sample Log

BYRNELOOBY

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
IP	0.00	1.20	22-04-22	22-04-22	JR	Hand tools	HP	22-04-22	
WS	1.20	3.45	22-04-22	22-04-22	JR	Competitor Dart	HP	22-04-22	

Location details:

Grid:

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
				(0.30)	Soft black sandy gravelly CLAY with abundant rootlets. Gravel is angular to subrounded fine to coarse of brick, concrete, sandstone and mudstone. (TOPSOIL)			0.10	ES1	
				0.30	Soft black sandy gravelly CLAY. Gravel is subangular to rounded fine to coarse of brick, sandstone and mudstone. (MADE GROUND)			0.30 - 1.00	B3	
								0.50	ES2	
				(0.70)						
				1.00	Orangish brown gravelly SAND with occasional cobbles. Gravel is subangular to rounded fine to coarse sandstone and mudstone. Cobbles are of sandstone.	Dry		1.20 - 1.65 1.20 - 1.65 1.20 - 2.00	S D4 D5	N=12 (2,3/3,3,3,3)
				(1.50)						
						Dry		2.00 - 2.45 2.00 - 2.45 2.00 - 2.50	S D6 B7	N=50 (9,13/18,16,13,3)
				2.50	Grey gravelly very clayey SAND with some very sandy clay pockets. Gravel is angular to subrounded fine to coarse of sandstone and mudstone.					
				(0.95)		Dry		3.00 - 3.36 3.00 - 3.45	S D8	50 (10,13/50 for 205mm)
				3.45	Dynamic sample ends at 3.45 m (Refusal)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck: Rose to: Casing: Sealed:

Casing:

Cased to: Diameter (mm):

Depth related remarks:

From to: Remarks

Run details:

From: to: Ø Duration: Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: DRAFT

Scale: 1:25

Project: Bredbury Substation

Project No: K0150

Client: Pivot Power

Exploratory position reference:

WS01

Dynamic Sample Log

BYRNELOOBY

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
IP	0.00	1.20	22-04-22	22-04-22	JR	Hand tools	HP	22-04-22	
WS	1.20	4.45	22-04-22	22-04-22	JR	Competitor Dart	HP	22-04-22	

Location details:

Grid:

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Water	Casing	Depth	Type & No	Results
				(0.30)	Soft black sandy gravelly CLAY with abundant rootlets. Gravel is angular to subrounded fine to coarse of brick, concrete, sandstone and mudstone. (TOPSOIL)			0.10	ES1	
				0.30	Black gravelly clayey SAND. Gravel is angular to subangular fine to coarse of sandstone, mudstone and brick. Sand is of ash. (MADE GROUND)			0.30 - 1.20	B3	
								0.50	ES2	
				(1.30)						
						Dry		1.20 - 1.65	S	N=11 (1,2/3,3,2,3)
								1.20 - 1.65	D4	
				1.60	Firm dark grey slightly gravelly sandy CLAY. Gravel is subangular to rounded fine to coarse of sandstone and mudstone.			1.60 - 2.00	D6	
								1.70	ES5	
				(0.60)						
						Dry		2.00 - 2.45	S	N=14 (7,9/7,3,2,2)
								2.00 - 2.45	D7	
				2.20	Grey gravelly very clayey SAND with some very sandy clay pockets. Gravel is subangular to rounded fine to carse of sandstone and mudstone.			2.20 - 3.00	B8	
						Dry		3.00 - 3.45	S	N=33 (6,7/8,10,8,7)
								3.00 - 3.45	D9	
								3.00 - 4.00	B10	
				(2.25)						
	▼					Dry			S	50 (25 for 10mm/50 for 20mm)
								4.00 - 4.45	D11	
				4.45	Dynamic sample ends at 4.45 m (Refusal)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Samples & In Situ Testing

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:
3.80	0.00		

Casing:

Cased to: Diameter (mm):

Depth related remarks:

From to: Remarks

Run details:

From: to: Ø Duration: Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: DRAFT

Scale: 1:25

Project: Bredbury Substation

Project No: K0150

Client: Pivot Power

Exploratory position reference:

WS02

Sheet 1 of 1

Dynamic Sample Log

BYRNELOOBY

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
IP	0.00	1.20	21-04-22	21-04-22	JR	Hand tools	HP	21-04-22	
WS	1.20	5.45	21-04-22	21-04-22	JR	Competitor Dart	HP	21-04-22	

Location details:

Grid:

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
				0.15	Frim black sandy gravelly CLAY with abundant rootlets. Gravel is angular to rounded fine to coarse of sandstone, mudstone and brick. (TOPSOIL)					
				0.25	Grey angular fine to coarse GRAVEL of limestone. (MADE GROUND)			0.30	ES1	
				(0.75)	Soft black slightly sandy, gravelly CLAY. Gravel is angular to subrounded fine to coarse of sandstone, mudstone, concrete and brick. (MADE GROUND)					
				1.00	Soft orangish brown very sandy CLAY.			1.10	ES2	
						Dry		1.10 - 1.20	B3	
								1.20 - 1.65	S	N=1 (1,0/1,0,0,0)
								1.20 - 1.65	D4	
				(0.80)				1.20 - 1.80	B5	
								1.50	ES6	
				1.80	Orangish brown gravelly SAND with occasional cobbles. Gravel is subangular to rounded fine to coarse sandstone and mudstone. Cobbles are of sandstone.					
						Dry		2.00 - 2.45	S	N=15 (3,3/4,4,3,4)
								2.00 - 2.45	D7	
				(1.20)						
				3.00	Firm blueish grey slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse of sandstone and mudstone	Dry		3.00 - 3.45	S	N=12 (2,1/2,3,3,4)
								3.00 - 3.45	D8	
								3.00 - 3.80	B9	
				(0.80)						
				3.80	Grey clayey fine to coarse SAND.			3.80 - 4.60	B11	
	▼					Dry		4.00 - 4.45	S	N=50 (7,8/10,14,13,13)
								4.00 - 4.45	D10	
				(0.80)						
				4.60	Firm orangish brown gravelly CLAY. Gravel is subangular to rounded fine to coarse of sandstone and mudstone.			4.60 - 5.00	B12	
				(0.85)		Dry		5.00 - 5.44	S	50 (5,6/50 for 285mm)
								5.00 - 5.45	D13	

	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:
4.00	0.00		

Casing:

Cased to:	Diameter (mm):

Depth related remarks:

From	to:	Remarks

Run details:

From:	to:	Ø	Duration:	Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: DRAFT

Scale: 1:25

Project: Bredbury Substation

Project No: K0150

Client: Pivot Power

Exploratory position reference:

WS03

Dynamic Sample Log

BYRNELOOBY

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
IP	0.00	1.20	21-04-22	21-04-22	JR	Hand tools	HP	21-04-22	
WS	1.20	5.45	21-04-22	21-04-22	JR	Competitor Dart	HP	21-04-22	

Location details:

Grid:

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
				5.45	Firm orangish brown gravelly CLAY. Gravel is subangular to rounded fine to coarse of sandstone and mudstone.					
					Dynamic sample ends at 5.45 m (Target depth)					

	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck: Rose to: Casing: Sealed:

Casing:

Cased to: Diameter (mm):

Depth related remarks:

From to: Remarks

Run details:

From: to: Ø Duration: Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: DRAFT

Scale: 1:25

Project: Bredbury Substation

Project No: K0150

Client: Pivot Power

Exploratory position reference:

WS03

Dynamic Sample Log

BYRNELOOBY

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
IP	0.00	1.20	21-04-22	21-04-22	JR	Hand tools	HP	21-04-22	
WS	1.20	3.45	21-04-22	21-04-22	JR	Competitor Dart	HP	21-04-22	

Location details:

Grid:

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Water	Casing	Depth	Type & No	Results
				(1.30)	Soft black sandy gravelly CLAY with abundant rootlets and occasional cobbles. Gravel is subangular to rounded fine to coarse of sandstone, mudstone, brick and glass. Cobbles are angular to subrounded of brick and sandstone. (MADE GROUND)			0.20 - 1.00	B2	
								0.50	ES1	
				1.30		Dry		1.20 - 1.65	S	N=11 (3,3/3,2,3,3)
								1.20 - 1.65	D3	
								1.20 - 2.00	B4	
	(50)				Orangish brown gravelly SAND with occasional cobbles. Gravel is subangular to rounded fine to coarse sandstone and mudstone. Cobbles are of sandstone.			1.50	ES5	
				(2.15)		Dry		2.00 - 2.45	S	N=6 (1,1/2,1,1,2)
								2.00 - 3.00	B6	
	SP (50)					Dry		3.00 - 3.44	S	50 (5,6/50 for 285mm)
								3.00 - 3.45	D7	
				3.45	Dynamic sample ends at 3.45 m (Refusal)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Samples & In Situ Testing

Groundwater entries:

Struck: Rose to: Casing: Sealed:

Casing:

Cased to: Diameter (mm):

Depth related remarks:

From to: Remarks

Run details:

From: to: Ø Duration: Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: DRAFT

Scale: 1:25

Project: Bredbury Substation

Project No: K0150

Client: Pivot Power

Exploratory position reference:

WS04

Sheet 1 of 1

Dynamic Sample Log

BYRNELOOBY

Borehole formation details: | **Location details:**

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
IP	0.00	1.20	21-04-22	21-04-22	JR	Hand tools	HP	21-04-22	
WS	1.20	3.00	21-04-22	21-04-22	JR	Competitor Dart	HP	21-04-22	

Grid:

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
				(0.50)	Soft black sandy slightly gravelly CLAY with abundant rootlets. Gravel is subangular to subrounded fine to coarse of sandstone and mudstone. (TOPSOIL)			0.30	ES1	
				0.50						
				(1.50)	Orangish brown gravelly SAND with occasional cobbles. Gravel is subangular to rounded fine to coarse sandstone and mudstone. Cobbles are of sandstone.			0.90	ES2	
						Dry		1.20 - 1.65 1.20 - 1.65	S D3	N=11 (2,3/3,2,3,3)
				2.00		Dry		2.00 - 2.45 2.00 - 2.45 2.00 - 3.00	S D5 B4	N=29 (3,4/7,8,7,7)
				(1.00)	No recovery					
				3.00	Dynamic sample ends at 3.00 m (Hole Collapse)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck: Rose to: Casing: Sealed:

Casing:

Cased to: Diameter (mm):

Depth related remarks:

From to: Remarks

Run details:

From: to: Ø Duration: Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: DRAFT

Scale: 1:25

Project: Bredbury Substation

Project No: K0150

Client: Pivot Power

Exploratory position reference:

WS05

Sheet 1 of 1

Dynamic Sample Log

BYRNELOOBY

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
IP	0.00	1.20	22-04-22	22-04-22	JR	Hand tools	HP	22-04-22	
WS	1.20	5.45	22-04-22	22-04-22	JR	Competitor Dart	HP	22-04-22	

Location details:

Grid:

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
				0.15	Soft brown sandy gravelly CLAY with abundant rootlets. Gravel is angular to subrounded fine to coarse of sandstone, mudstone brick and concrete. (TOPSOIL)			0.10	ES1	
				0.30	Grey angular fine to coarse GRAVEL of limestone. (MADE GROUND)			0.30 - 1.00	B3	
				(0.70)	Firm black sandy gravelly CLAY. Gravel is subangular to rounded fine to coarse of sandstone and mudstone.			0.50	ES2	
	(50)			1.00	Orangish brown gravelly SAND with occasional cobbles. Gravel is subangular to rounded fine to coarse sandstone and mudstone. Cobbles are of sandstone.	Dry		1.20 - 1.65 1.20 - 1.65 1.20 - 2.00	S D4 B6	N=10 (1,2/2,2,3,3)
								1.50	ES5	
				(2.00)		Dry		2.00 - 2.45 2.00 - 2.45 2.00 - 3.00	S D7 B8	N=28 (5,8/8,7,7,6)
				3.00	Stiff brown sandy slightly gravelly CLAY. Gravel is subangular to rounded fine to coarse of sandstone and mudstone.	Dry		3.00 - 3.45 3.00 - 3.45 3.00 - 3.90	S D9 B10	N=14 (1,1/4,4,3,3)
				(0.90)						
	SP (50)			3.90	Stiff grey laminated CLAY with silt partings.	Dry		4.00 - 4.45 4.00 - 4.45 4.00 - 5.00	S D11 B12	N=30 (4,6/8,8,7,7)
				(1.55)						
						Dry		5.00 - 5.45	S	N=27 (4,5/5,7,7,8)
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Casing:

Cased to:	Diameter (mm):

Depth related remarks:

From	to:	Remarks

Run details:

From:	to:	Ø	Duration:	Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: DRAFT

Scale: 1:25

Project: Bredbury Substation

Project No: K0150

Client: Pivot Power

Exploratory position reference:

WS06

Dynamic Sample Log

BYRNELOOBY

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
IP	0.00	1.20	22-04-22	22-04-22	JR	Hand tools	HP	22-04-22	
WS	1.20	5.45	22-04-22	22-04-22	JR	Competitor Dart	HP	22-04-22	

Location details:

Grid:

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
				5.45	Stiff grey laminated CLAY with silt partings.					
					Dynamic sample ends at 5.45 m (Target depth)					

	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck: Rose to: Casing: Sealed:

Casing:

Cased to: Diameter (mm):

Depth related remarks:

From to: Remarks

Run details:

From: to: Ø Duration: Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: DRAFT

Scale: 1:25

Project: Bredbury Substation

Project No: K0150

Client: Pivot Power

Exploratory position reference:

WS06

Dynamic Sample Log

BYRNELOOBY

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
IP	0.00	1.20	22-04-22	22-04-22	JR	Hand tools	HP	22-04-22	
WS	1.20	3.45	22-04-22	22-04-22	JR	Competitor Dart	HP	22-04-22	

Location details:

Grid:

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
				(0.30)	Soft black sandy gravelly CLAY with abundant rootlets . Gravel is angular to subrounded fine to coarse of brick, concrete, sandstone and mudstone. (TOPSOIL)			0.10	ES1	
				0.30	Soft black sandy gravelly CLAY. Gravel is subangular to rounded fine to coarse of sandstone and mudstone.			0.30 - 1.10	B3	
								0.50	ES2	
				(0.80)						
				1.10	Orangish brown gravelly SAND with occasional cobbles. Gravel is subangular to rounded fine to coarse sandstone and mudstone. Cobbles are of sandstone.	Dry		1.20 - 1.65 1.20 - 1.65 1.20 - 2.00	S D4 B5	N=9 (2,2/2,2,3,2)
						Dry		2.00 - 2.45 2.00 - 2.45 2.00 - 3.00	S D6 B7	N=14 (2,3/3,4,3,4)
				(2.35)						
						Dry		3.00 - 3.45 3.00 - 3.45	S D8	N=50 (3,8/17,15,12,6)
				3.45	Dynamic sample ends at 3.45 m (Refusal)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck: Rose to: Casing: Sealed:

Casing:

Cased to: Diameter (mm):

Depth related remarks:

From to: Remarks

Run details:

From: to: Ø Duration: Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: DRAFT

Scale: 1:25

Project: Bredbury Substation

Project No: K0150

Client: Pivot Power

Exploratory position reference:

WS07

Sheet 1 of 1

Dynamic Sample Log

BYRNELOOBY

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
IP	0.00	1.20	21-04-22	21-04-22	JR	Hand tools	HP	21-04-22	
WS	1.20	2.45	21-04-22	21-04-22	JR	Competitor Dart	HP	21-04-22	

Location details:

Grid:

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
				0.15	Soft black sandy gravelly CLAY with abundant rootlets . Gravel is angular to subrounded fine to coarse of brick, concrete, sandstone and mudstone. (TOPSOIL)					
				0.40	Grey angular fine to coarse GRAVEL of limestone. (MADE GROUND)			0.40 - 1.20	B2	
					Soft black sandy gravelly CLAY. Gravel is subangular to rounded fine to coarse of sandstone, brick, mudstone and concrete. (MADE GROUND)			0.50	ES1	
				(1.00)		Dry		1.20 - 1.65 1.20 - 1.65	S D3	N=17 (3,4/4,4,4,5)
				1.40	Orangish brown gravelly SAND with occasional cobbles. Gravel is subangular to rounded fine to coarse sandstone and mudstone. Cobbles are of sandstone.			1.50 - 2.00	B4	
				(1.05)		Dry		2.00 - 2.28 2.00 - 2.45	S D5	50 (7,8/50 for 135mm)
				2.45	Dynamic sample ends at 2.45 m (Refusal)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck: Rose to: Casing: Sealed:

Casing:

Cased to: Diameter (mm):

Depth related remarks:

From to: Remarks

Run details:

From: to: Ø Duration: Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: DRAFT

Scale: 1:25

Project: Bredbury Substation

Project No: K0150

Client: Pivot Power

Exploratory position reference:

WS08

Sheet 1 of 1

Dynamic Sample Log

BYRNELOOBY

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
IP	0.00	1.20	21-04-22	21-04-22	JR	Hand tools	HP	21-04-22	
WS	1.20	3.45	21-04-22	21-04-22	JR	Competitor Dart	HP	21-04-22	

Location details:

Grid:

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Water	Casing	Depth	Type & No	Results
				(0.80)	Soft black sandy gravelly CLAY with abundant rootlets and occasional cobbles. Gravel is subangular to rounded fine to coarse of sandstone, mudstone, brick and glass. Cobbles are angular to subrounded of brick and sandstone. (TOPSOIL)			0.20 - 1.00	B2	
								0.50	ES1	
	(50)			0.80	Soft black sandy gravelly CLAY with occasional cobbles. Gravel is subangular to rounded fine to coarse of sandstone, mudstone, brick and glass. Cobbles are angular to subrounded of brick and sandstone. (MADE GROUND)	Dry		1.20 - 1.65	S	N=16 (2,3/3,3,3,7)
								1.20 - 1.65	D3	
				(1.20)				1.20 - 1.80	B5	
								1.50	ES4	
	SP (50)			2.00	Orangish brown gravelly SAND with occasional cobbles. Gravel is subangular to rounded fine to coarse sandstone and mudstone. Cobbles are of sandstone.	Dry		2.00 - 2.45	S	N=8 (3,2/2,2,2,2)
								2.00 - 2.45	D6	
				(1.45)				2.00 - 3.00	B7	
						Dry		3.00 - 3.36	S	50 (7,9/50 for 205mm)
								3.00 - 3.45	D8	
				3.45	Dynamic sample ends at 3.45 m (Refusal and hole collapse)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Samples & In Situ Testing

Groundwater entries:

Struck: Rose to: Casing: Sealed:

Casing:

Cased to: Diameter (mm):

Depth related remarks:

From to: Remarks

Run details:

From: to: Ø Duration: Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: DRAFT

Scale: 1:25

Project: Bredbury Substation

Project No: K0150

Client: Pivot Power

Exploratory position reference:

WS09

BYRNELOOBY
AN ayesa COMPANY

Window Sample Photo Sheet

WS01

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

WS01
1.2 m – 2.0 m

WS01
2.0 m – 3.0 m

BYRNELOOBY
AN ayesa COMPANY

Window Sample Photo Sheet

WS02

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

Sheet 1 of X

WS02
1.2 m – 2.0 m

WS01
2.0 m – 3.0 m

BYRNELOOBY
AN AYESA COMPANY

Window Sample Photo Sheet

WS02

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

WS02
3.0 m – 4.0 m

BYRNELOOBY
AN ayesa COMPANY

Window Sample Photo Sheet

WS03

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

WS03
1.2 m – 2.0 m

WS03
3.0 m – 4.0 m

AGS
Suite 104
Mere Business Park
Leaside
Saint Helens
WA(5GG

Unless otherwise stated:
Depth (m), Diameter (mm),Time (hhmm), Thickness (m), Level (mOD).

Equipment Used	Contractor	Logged By	Checked By
Competitor Dart	**PM Sampling**	**HP**	**NR**

BYRNELOOBY
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Window Sample Photo Sheet

WS03

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

WS03
4.0 m – 5.0 m

BYRNELOOBY
AN ayesa COMPANY

Window Sample Photo Sheet

WS04

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

WS04
1.2 m – 2.0 m

WS04
2.0 m – 3.0 m

BYRNELOOBY
AN AYESA COMPANY

Window Sample Photo Sheet

WS05

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

WS05
1.2 m – 2.0 m

BYRNELOOBY
AN ayesa COMPANY

Window Sample Photo Sheet

WS06

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

WS06
1.2 m – 2.0 m

WS06
2.0 m – 3.0 m

BYRNELOOBY
AN AYESA COMPANY

Window Sample Photo Sheet

WS06

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

WS06
3.0 m – 4.0 m

WS06
4.0 m – 5.0 m

BYRNELOOBY
AN AYESA COMPANY

Window Sample Photo Sheet

WS06

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

WS06
4.0 m – 5.0 m

BYRNELOOBY
AN ayesa COMPANY

Window Sample Photo Sheet

WS07

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

WS07
1.2 m – 2.0 m

WS06
2.0 m – 2.0 m

BYRNELOOBY
AN AYESA COMPANY

Window Sample Photo Sheet

WS08

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

WS08
1.2 m – 2.0 m

BYRNELOOBY
AN AYESA COMPANY

Window Sample Photo Sheet

WS09

Project name:	Project No:	Ground Level (mAOD)	Start Date
Bredbury Substation Battery Area	**K0150**	**XX.XX**	**21/04/2022**
Client:	Easting (OS mE)	Northing (OS mN)	End Date
Pivot Power	**XXXXXX.XX**	**XXXXXX.XX**	**22/04/2022**

WS09
1.2 m – 2.0 m

WS09
2.0 m – 2.0 m

Appendix J – Gas and Groundwater Monitoring

No: K0150

GROUNDWATER AND GROUND GAS MONITORING

BYRNELOOBY

Site: Bredbury Substation Battery Area

Location	Date	Monitored by	Well Details		Groundwater		Gas											Weather		Serial No.
			Standpipe diameter (mm)	Depth to Base (m bgl)	Water Depth (m bgl)	Water Sample Taken?	Atmospheric Pressure (mbar)	Atmospheric Pressure Comment	Relative Pressure (mb)	Flow (l/h)	CH_4 (% v/v)	GSV CH_4 (l/hr)	CO_2 (% v/v)	GSV CO_2 (l/hr)	O_2 (% v/v)	CO (ppm)	H2S (ppm)	Conditions	Ambient Temp °C	
WS04	28/04/22	OS	51	2.90	Dry	N	-	-	-	-	-	-	-	-	-	-	-	Overcast	-	
	12/05/22	OS	51	2.89	Dry	N	1010	Steady	-5.00	-0.7	-0.2	0.0014	4.5	-0.0315	16.5	0	0	Overcast	13	12417
	27/05/22	OS	51	2.89	Dry	N	1019	Rising	-7.00	-1.3	-0.1	0.0013	5.6	-0.0728	15.5	0	0	Overcast	14	12417
												0.0000		0.0000						
												0.0000		0.0000						
WS09	28/04/22	OS	51	1.94	Dry	N	-	-	-	-	-	-	-	-	-	-	-	Overcast	-	
	12/05/22	OS	51	1.95	Dry	N	1011	Steady	-5.00	0.2	-0.2	-0.0004	3.3	0.0066	16.9	0	0	Overcast	13	12417
	27/05/22	OS	51	1.93	Dry	N	1018	Rising	-8.00	-1.3	-0.1	0.0013	4.6	-0.0598	15.4	0	0	Overcast	14	12417
												0.0000		0.0000						
												0.0000		0.0000						
WS06	28/04/22	OS	51	3.90	3.19	N	-	-	-	-	-	-	-	-	-	-	-	Overcast	-	
	12/05/22	OS	51	3.91	3.27	N	1011	Steady	-5.00	-0.7	-0.2	0.0014	6.9	-0.0483	12.3	0	0	Overcast	13	12417
	27/05/22	OS	51	3.91	3.28	N	1019	Rising	-6.00	-1.2	-0.2	0.0024	4.2	-0.0504	15.2	0	0	Overcast	14	12417
												0.0000		0.0000						
												0.0000		0.0000						

NOTES:

NM = Not Measured.

(x) = Peak value recorded.

[grey] = Below detection limit.

GSV (l/HR) = [gas concentration (%v/v)] x [gas well flow rate (l/hr)]
100

Appendix K – Laboratory Chemical Testing Results

Certificate of Analysis

Certificate Number	22-08855	*Issued:*	16-May-22

Client Byrne Looby
Abbot House
Pilgrims Court
Sydenham Road
Guildford
GU1 3RX
GU1 3RX

Our Reference	22-08855
Client Reference	(not supplied)
Order No	141314
Contract Title	Bredbury Substation
Description	10 Soil samples.
Date Received	10-May-22
Date Started	10-May-22
Date Completed	16-May-22
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 22-08855
Client Ref
Contract Title Bredbury Substation

				Lab No	2006823	2006824	2006825	2006826	2006827	2006828
				.Sample ID	TP01	TP04	TP05	TP06	TP07	TP08
				Depth	1.00	0.10	0.30	0.60	0.15	0.40
				Other ID	2	1	2	2	1	2
				Sample Type	ES	ES	ES	ES	ES	ES
				Sampling Date	22/04/2022	22/04/2022	22/04/2022	22/04/2022	22/04/2022	22/04/2022
				Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Metals										
Arsenic	DETSC 2301#	0.2	mg/kg	4.6	20	19	5.7	18	17
Barium	DETSC 2301#	1.5	mg/kg	36	110	110	29	120	89
Beryllium	DETSC 2301#	0.2	mg/kg	0.3	0.7	0.7	0.4	0.7	0.6
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	< 0.2	0.3	0.3	< 0.2	0.3	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.5	0.5	< 0.1	0.4	0.3
Chromium	DETSC 2301#	0.15	mg/kg	11	32	32	14	26	16
Copper	DETSC 2301#	0.2	mg/kg	12	68	59	19	55	47
Lead	DETSC 2301#	0.3	mg/kg	6.2	110	96	13	92	67
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	< 10	< 10	< 10	< 10	< 10	< 10
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.37	0.32	0.05	0.32	0.40
Nickel	DETSC 2301#	1	mg/kg	13	19	19	16	19	15
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	13	28	29	19	30	26
Zinc	DETSC 2301#	1	mg/kg	34	100	100	46	91	64
Inorganics										
pH	DETSC 2008#		pH	7.2	6.4	6.6	6.4	6.2	6.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.3	0.3	< 0.1	0.2	0.3
Total Organic Carbon	DETSC 2084#	0.5	%	< 0.5	5.7	3.2	0.7	3.7	3.1
Ammonia Aqueous Extract as N	DETSC 2119	10	mg/l	< 10	< 10	< 10	< 10	< 10	< 10
Chloride Aqueous Extract	DETSC 2055	1	mg/l	5.0	5.7	3.6	3.6	4.0	6.2
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	4.8	7.2	4.3	1.8	4.6	4.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	30	22	14	10	13	14
Sulphur as S, Total	DETSC 2320	0.01	%	0.01	0.03	0.03	< 0.01	0.03	0.02
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.02	0.06	0.06	0.02	0.06	0.04
PAHs										
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	1.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.4	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	1.5	0.5	< 0.1	1.0	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	1.8	0.7	< 0.1	1.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.6	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	0.8	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.6	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.5	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	1.4	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	< 1.6	8.6	< 1.6	< 1.6	2.0	< 1.6

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 22-08855
Client Ref
Contract Title Bredbury Substation

				Lab No	2006823	2006824	2006825	2006826	2006827	2006828
				.Sample ID	TP01	TP04	TP05	TP06	TP07	TP08
				Depth	1.00	0.10	0.30	0.60	0.15	0.40
				Other ID	2	1	2	2	1	2
				Sample Type	ES	ES	ES	ES	ES	ES
				Sampling Date	22/04/2022	22/04/2022	22/04/2022	22/04/2022	22/04/2022	22/04/2022
				Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.4	0.7	< 0.3	0.5	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 22-08855
Client Ref
Contract Title Bredbury Substation

				Lab No	2006829	2006830	2006831	2006832
				.Sample ID	TP09	TP10	TP10	TP13
				Depth	1.40	0.10	0.50	0.40
				Other ID	3	1	2	2
				Sample Type	ES	ES	ES	ES
				Sampling Date	22/04/2022	22/04/2022	22/04/2022	22/04/2022
				Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Metals								
Arsenic	DETSC 2301#	0.2	mg/kg	4.9	17	20	5.9
Barium	DETSC 2301#	1.5	mg/kg	46	180	190	65
Beryllium	DETSC 2301#	0.2	mg/kg	0.3	0.7	0.7	0.4
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.2	0.3	0.2	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.5	0.4	0.1
Chromium	DETSC 2301#	0.15	mg/kg	14	34	21	13
Copper	DETSC 2301#	0.2	mg/kg	13	54	56	19
Lead	DETSC 2301#	0.3	mg/kg	13	110	90	28
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	< 10	< 10	< 10	< 10
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.38	0.38	0.08
Nickel	DETSC 2301#	1	mg/kg	9.9	18	17	13
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	18	25	28	17
Zinc	DETSC 2301#	1	mg/kg	40	93	76	79
Inorganics								
pH	DETSC 2008#		pH	6.3	5.8	7.2	7.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	0.7	0.3	< 0.1
Total Organic Carbon	DETSC 2084#	0.5	%	0.8	4.2	3.8	1.0
Ammonia Aqueous Extract as N	DETSC 2119	10	mg/l	< 10	< 10	< 10	< 10
Chloride Aqueous Extract	DETSC 2055	1	mg/l	3.3	4.2	2.5	8.3
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	2.2	5.4	3.1	15
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	25	15	24	19
Sulphur as S, Total	DETSC 2320	0.01	%	0.01	0.03	0.03	0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.03	0.07	0.06	0.03
PAHs								
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	1.5	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	1.6	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	7.9	1.4	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	1.6	0.4	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	6.7	1.9	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	6.9	2.0	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	2.9	0.9	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	2.6	0.8	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	1.8	0.7	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	1.0	0.3	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	2.7	1.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	1.7	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.3	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	1.6	< 0.1	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	< 1.6	41	9.4	< 1.6

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 22-08855
Client Ref
Contract Title Bredbury Substation

				Lab No	2006829	2006830	2006831	2006832
				.Sample ID	TP09	TP10	TP10	TP13
				Depth	1.40	0.10	0.50	0.40
				Other ID	3	1	2	2
				Sample Type	ES	ES	ES	ES
				Sampling Date	22/04/2022	22/04/2022	22/04/2022	22/04/2022
				Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Phenols								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.5	< 0.3	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Asbestos Analysis
Soil Samples

Our Ref 22-08855
Client Ref
Contract Title Bredbury Substation

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2006824	TP04 1 0.10	SOIL	NAD	none	Keith Wilson
2006825	TP05 2 0.30	SOIL	NAD	none	Keith Wilson
2006826	TP06 2 0.60	SOIL	NAD	none	Keith Wilson
2006827	TP07 1 0.15	SOIL	NAD	none	Keith Wilson
2006828	TP08 2 0.40	SOIL	NAD	none	Keith Wilson
2006830	TP10 1 0.10	SOIL	NAD	none	Keith Wilson
2006831	TP10 2 0.50	SOIL	NAD	none	Keith Wilson
2006832	TP13 2 0.40	SOIL	NAD	none	Keith Wilson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 22-08855
Client Ref
Contract Bredbury Substation

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2006823	TP01 1.00 SOIL	22/04/22	GJ 250ml, PT 1L		
2006824	TP04 0.10 SOIL	22/04/22	GJ 250ml, PT 1L		
2006825	TP05 0.30 SOIL	22/04/22	GJ 250ml, PT 1L		
2006826	TP06 0.60 SOIL	22/04/22	PT 1L		
2006827	TP07 0.15 SOIL	22/04/22	GJ 250ml, PT 1L		
2006828	TP08 0.40 SOIL	22/04/22	GJ 250ml, PT 1L		
2006829	TP09 1.40 SOIL	22/04/22	GJ 250ml, PT 1L		
2006830	TP10 0.10 SOIL	22/04/22	GJ 250ml, PT 1L		
2006831	TP10 0.50 SOIL	22/04/22	GJ 250ml, PT 1L		
2006832	TP13 0.40 SOIL	22/04/22	PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

Appendix L – Screening Summary of Chemical Analysis of Soils

Site: Bredbury Substation

CHEMICAL STATISTICAL ANALYSIS - based on CLEA v1.06 (Sandy Loam 1% SOM)

BYRNELOOBY AN ayesa COMPANY

Job No: K0150

Analyte	Limit of Detection	2006823	2006824	2006825	2006826	2006827	2006828	2006829	2006830	2006831	2006832	Statistical Analysis		SGV / GAC Statistical Results			SGV / GAC Criteria Source		pC4SL Screening Criteria		pC4SL Criteria Source		LQM/CIEH S4UL Screening Criteria		LQM/CIEH S4UL Criteria Source	
		TP01	TP04	TP05	TP06	TP07	TP08	TP09	TP10	TP10	TP13	n	Maximum	Maximum	Commercial & Industrial Tier 1 Screening Threshold	Pass/ Fail	Source of Screening Criteria	Source of Toxicological Data	Commercial	Pass / Fail	Source of Screening Criteria	Source of Toxicological Data	Commercial	Pass / Fail	Source of Screening Criteria	Source of Toxicological Data
		22/04/2022	22/04/2022	22/04/2022	22/04/2022	22/04/2022	22/04/2022	22/04/2022	22/04/2022	22/04/2022	22/04/2022															
		1.00	0.10	0.30	0.60	0.15	0.40	1.40	0.10	0.50	0.40															
		ES2	ES1	ES2	ES2	ES1	ES2	ES3	ES1	ES2	ES2															
Asbestos Screen	Positive / Negative	-	Negative	Negative	Negative	Negative	Negative	-	Negative	Negative	Negative		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																										
Arsenic (total)	<0.2 mg/kg	4.6	20	19	5.7	18	17	4.9	17	20	5.9	10	20.00	20.00	635	Pass	SC050021*	SC050021	640	Pass	CLEA v1.06	Defra 2014	640	Pass	CLEA v1.06	LQM/CIEH 2014
Boron (water soluble)	<0.2 mg/kg	< 0.2	0.3	0.3	< 0.2	0.3	0.3	0.2	0.3	0.2	0.3	10	0.30	0.30	192000	Pass	CLEA v1.06	LQM 2009	-	-	-	-	240000	Pass	CLEA v1.06	LQM/CIEH 2014
Cadmium (total)	<0.5 mg/kg	0.2	0.5	0.5	< 0.1	0.4	0.3	< 0.1	0.5	0.4	0.1	10	0.50	0.50	230	Pass	SC050021*	SC050021	420	Pass	CLEA v1.06	Defra 2014	190	Pass	CLEA v1.06	LQM/CIEH 2014
Chromium (total) (III for S4ULs)	<0.15 mg/kg	11	32	32	14	26	16	14	34	21	13	10	34.00	34.00	30400	Pass	CLEA v1.06	LQM 2009	-	-	-	-	8600	Pass	CLEA v1.06	LQM/CIEH 2014
Copper (total)	<0.2 mg/kg	12	68	59	19	55	47	13	54	56	19	10	68.00	68.00	71700	Pass	CLEA v1.06	LQM 2009	-	-	-	-	68000	Pass	CLEA v1.06	LQM/CIEH 2014
Lead (total)	<0.3 mg/kg	6.2	110	96	13	92	67	13	110	90	28	10	110.00	110.00	N/A	-	-	-	6000	Pass	CLEA v1.06	Defra 2014	-		-	-
Mercury (total inorganic)	<0.05 mg/kg	< 0.05	0.37	0.32	0.05	0.32	0.40	< 0.05	0.38	0.38	0.08	10	0.40	0.40	3640	Pass	SC050021*	SC050021	-	-	-	-	1100	Pass	CLEA v1.06	LQM/CIEH 2014
Nickel (total)	<1 mg/kg	13	19	19	16	19	15	9.9	18	17	13	10	19.00	19.00	840	Pass	CLEA v1.071	EFSA	-	-	-	-	980	Pass	CLEA v1.06	LQM/CIEH 2014
Selenium (total)	<0.5 mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	< 0.5	< 0.5	10	0.50	0.50	13000	Pass	SC050021*	SC050021	-	-	-	-	120000	Pass	CLEA v1.06	LQM/CIEH 2014
Zinc (total)	<1 mg/kg	34	100	100	46	91	64	40	93	76	79	10	100.00	100.00	662000	Pass	CLEA v1.06	LQM 2009	-	-	-	-	730000	Pass	CLEA v1.06	LQM/CIEH 2014
Barium	<1.5 mg/kg	36	110	110	29	120	89	46	180	190	65	10	190.00	190.00	22000	Pass	CLEA v1.06	IC/AGS/CL:AIR	-	-	-	-	-		-	-
Vanadium	<0.8 mg/kg	13	28	29	19	30	26	18	25	28	17	10	30.00	30.00	3160	Pass	CLEA v1.06	LQM 2009	-	-	-	-	9000	Pass	CLEA v1.06	LQM/CIEH 2014
Inorganic																			-	-	-	-	-	-		
pH Value	pH Units	7.2	6.4	6.6	6.4	6.2	6.4	6.3	5.8	7.2	7.8	10	7.80	7.80	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide (total)	<0.1 mg/kg	< 0.1	0.3	0.3	< 0.1	0.2	0.3	0.1	0.7	0.3	< 0.1	10	0.70	0.70	-	-	-	-	-	-	-	-	-	-	-	-
Ammonia expressed as NH4	<10 mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	10	10.00													
Chloride (2:1)	<1 mg/l	5.0	5.7	3.6	3.6	4.0	6.2	3.3	4.2	2.5	8.3	10	8.30													
Sulphur (total)	0.01%	0.01	0.03	0.03	< 0.01	0.03	0.02	0.01	0.03	0.03	0.01	10	0.03													
Sulphate (2:1)	<10 mg/l	30	22	14	10	13	14	25	15	24	19	10	30.00	30.00	-	-	-	-	-	-	-	-	-	-	-	-
Sulphate (total)	<0.01 %	0.02	0.06	0.06	0.02	0.06	0.04	0.03	0.07	0.06	0.03	10	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-
Organic																			-	-	-	-	-	-		
TOC	<0.5 %	< 0.5	5.7	3.2	0.7	3.7	3.1	0.8	4.2	3.8	1.0	10	5.70	5.70	-	-	-	-	-	-	-	-	-	-	-	-
Phenol (Total Monohydric)	<0.3 mg/kg	< 0.3	0.4	0.7	< 0.3	0.5	< 0.3	< 0.3	0.5	< 0.3	< 0.3	10	0.70	0.70	24200	Pass	CLEA v1.06	SC050021	-	-	-	-	760	Pass	CLEA v1.06	LQM/CIEH 2014
PAH																										
Naphthalene	<0.1 mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	10	0.10	0.10	200	Pass	CLEA v1.06	LQM 2009	-	-	-	-	190	Pass	CLEA v1.06	LQM/CIEH 2014
Acenaphthylene	<0.1 mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	10	0.10	0.10	84000	Pass	CLEA v1.06	LQM 2009	-	-	-	-	83000	Pass	CLEA v1.06	LQM/CIEH 2014
Acenaphthene	<0.1 mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5	< 0.1	< 0.1	10	1.50	1.50	8500	Pass	CLEA v1.06	LQM 2009	-	-	-	-	84000	Pass	CLEA v1.06	LQM/CIEH 2014
Fluorene	<0.1 mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.6	< 0.1	< 0.1	10	1.60	1.60	64000	Pass	CLEA v1.06	LQM 2009	-	-	-	-	63000	Pass	CLEA v1.06	LQM/CIEH 2014
Phenanthrene	<0.1 mg/kg	< 0.1	1.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	7.9	1.4	< 0.1	10	7.90	7.90	22000	Pass	CLEA v1.06	LQM 2009	-	-	-	-	22000	Pass	CLEA v1.06	LQM/CIEH 2014
Anthracene	<0.1 mg/kg	< 0.1	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.6	0.4	< 0.1	10	1.60	1.60	530000	Pass	CLEA v1.06	LQM 2009	-	-	-	-	520000	Pass	CLEA v1.06	LQM/CIEH 2014
Fluoranthene	<0.1 mg/kg	< 0.1	1.5	0.5	< 0.1	1.0	< 0.1	< 0.1	6.7	1.9	< 0.1	10	6.70	6.70	23000	Pass	CLEA v1.06	LQM 2009	-	-	-	-	23000	Pass	CLEA v1.06	LQM/CIEH 2014
Pyrene	<0.1 mg/kg	< 0.1	1.8	0.7	< 0.1	1.1	< 0.1	< 0.1	6.9	2.0	< 0.1	10	6.90	6.90	54400	Pass	CLEA v1.06	LQM 2009	-	-	-	-	54000	Pass	CLEA v1.06	LQM/CIEH 2014
Benz(a)anthracene	<0.1 mg/kg	< 0.1	0.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	2.9	0.9	< 0.1	10	2.90	2.90	92	Pass	CLEA v1.06	LQM 2009	-	-	-	-	170	Pass	CLEA v1.06	LQM/CIEH 2014
Chrysene	<0.1 mg/kg	< 0.1	0.8	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	2.6	0.8	< 0.1	10	2.60	2.60	138	Pass	CLEA v1.06	LQM 2009	-	-	-	-	350	Pass	CLEA v1.06	LQM/CIEH 2014
Benzo(b)fluoranthene	<0.1 mg/kg	< 0.1	0.6	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.8	0.7	< 0.1	10	1.80	1.80	100	Pass	CLEA v1.06	LQM 2009	-	-	-	-	44	Pass	CLEA v1.06	LQM/CIEH 2014
Benzo(k)fluoranthene	<0.1 mg/kg	< 0.1	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.0	0.3	< 0.1	10	1.00	1.00	140	Pass	CLEA v1.06	LQM 2009	-	-	-	-	1200	Pass	CLEA v1.06	LQM/CIEH 2014
Benzo(a)pyrene	<0.1 mg/kg	< 0.1	1.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	2.7	1.1	< 0.1	10	2.70	2.70	14	Pass	CLEA v1.06	LQM 2009	77	Pass	CLEA v1.06	Defra 2014	35	Pass	CLEA v1.06	LQM/CIEH 2014
Indeno(123cd)pyrene	<0.1 mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.7	< 0.1	< 0.1	10	1.70	1.70	60	Pass	CLEA v1.06	LQM 2009	-	-	-	-	500	Pass	CLEA v1.06	LQM/CIEH 2014
Dibenzo(ah)anthracene	<0.1 mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	10	0.30	0.30	13	Pass	CLEA v1.06	LQM 2009	-	-	-	-	3.5	Pass	CLEA v1.06	LQM/CIEH 2014
Benzo(ghi)perylene	<0.1 mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.6	< 0.1	< 0.1	10	1.60	1.60	650	Pass	CLEA v1.06	LQM 2009	-	-	-	-	3900	Pass	CLEA v1.06	LQM/CIEH 2014
Total EPA-16 PAHs	<1.6 mg/kg	< 1.6	8.6	< 1.6	< 1.6	2.0	< 1.6	< 1.6	41	9.4	< 1.6	10	41.00	41.00	-	-	-	-	-	-	-	-	-	-	-	-

Below Detection Limits.
Exceeded GAC/SGV
Exceeded pC4SL / S4ULs
Assessment criteria for pH, Sulphide and Sulphate are not based on human health. Sulphate criteria assumes DS-1 ACEC classification for concrete.

Notes

1. Generic Qualitative Assessment Criteria have been used where appropriate based on the current CLEA 1.06 Model (default values, sandy loam 1%SOM). Where no CLEA generic guideline value has been calculated no assessment has been made. The results presented show maximum and mean concentrations. This is to provide a reasonable prediction of the range of data rather than to provide any detailed statistical appraisal.
2. Results lower than detection limit are shaded in grey.
3. When the test result is recorded as being less than the detection limit, the result used for the analysis is the detection limit.
4. Cyanide (total)*, in the absence of a GQAC based on current CLEA 1.06 Model, the Atrisk Soil Value for Cyanide (free) has been used.
5. For metals, where an SGV has been published, this value has been used. Note that the published SGVs do not include the residential without plant uptake scenario. CLEA v1.06 has therefore been used to derive GACs for this scenario. For organics, CLEA v1.06 has been used (as the SGV assumes 6% SOM)
6. pC4SL based on adjusted toxicology and expsoure assumptions
7. pC4SL for benzene assumes 6% SOM

Appendix M – Guidance for Classification of Soil for Off Site Disposal at a Landfill Site

Guidance for Classification of Soil for Off Site Disposal at a Landfill Site

Many site developments create a portion of excess soils and Made Ground which if not re-usable, are required to be disposed off-site at a suitably licensed landfill site. The regulations and associated guidance published by the Environment Agency is relatively complex and lengthy. This guidance provides a summary of the following documents which should be referred to when assessing soil (and common constituents found within Made Ground on remediation sites) for off-site disposal:

- Guidance for Waste destined for disposal in landfills: Interpretation of the Waste Acceptance Requirements of the Landfill (England and Wales) Regulations 2002 (as amended) (EA, 2004);
- Guidance on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance Procedures (EA, April 2005);
- WM3 - Hazardous Waste: Interpretation of the Definition and Classification of Hazardous Wastes (EA, May 2015);
- European Regulation No 1272/2008 on Classification, Labelling and Packaging of substances 2015 (CLP 2015);
- Guidance on Waste Destined for Disposal in Landfill (EA, June 2006);
- Treatment of Non-hazardous wastes for Landfill (EA, February 2007).

It is important to distinguish between the waste classification system and the designation of materials as "suitable for use" on site. A material may be retained on site for an appropriate end use if that end-use is clearly designated and that a site-specific risk assessment ensures that it does not pose a risk to human health or controlled waters. However, if this material is excavated and sent for disposal, the material is then subject to waste management regulations and the two systems cannot be directly correlated. It is therefore important to note that classifying a material as hazardous (should it be excavated and become a waste) does not necessarily indicate that it might not be suitable to be kept on site for re-use. Separate guidance in the form of a Code of Practice (CL:AIRE Version 2, 2011) has been developed jointly between the development industry and the Environment Agency to provide best practice when assessing whether materials are wastes or not, and for determining when waste can cease to be waste for a particular use.

In accordance with the current waste regulations (or Landfill Directive, as they are more commonly known), from 30th October 2007 all waste materials produced from construction sites have to be pre-treated prior to disposal. Pre-treatment includes waste minimisation, recovery (e.g., separation of demolition waste to be used as hardcore) and separation of materials into different waste categories (e.g., separate inert waste from hazardous waste etc). Mixing of different waste types shall be avoided and intentional mixing of inert materials with hazardous waste to 'dilute it' and hence change its waste classification, is illegal.

The current waste regulations (based on the EU landfill directive) introduced a two-tier classification system for waste materials, defining them as either being hazardous or non-

hazardous. Landfills are licensed to take wastes based on a three-tier classification system with the non- hazardous waste divided into two sub-categories:

- Non-Hazardous - inert;
- Non-Hazardous - non-hazardous;
- Hazardous.

Waste materials are categorised with a six-figure numeric code in the European Waste Catalogue. Commonly found construction and demolition wastes including excavated soil from contaminated sites and Made Ground with their waste codes are summarised below (this is not a comprehensive list):

Waste Code	What is it?	Likely Waste Category–		
		Inert Waste	Non-Hazardous	Hazardous Waste
17 01 01 Concrete	Concrete, possibly with reinforcement (from Construction & Demolition)	✓		
17 01 02 Bricks		✓		
17 01 06* Mixtures of concrete, bricks, tiles & ceramics containing dangerous substances	These are not normally considered hazardous but if they are contaminated (e.g., by asbestos) then could be hazardous – see comment above			✓
17 01 07 Mixtures of concrete, bricks, tiles & ceramics other than those in 17 01 06	This is mixed inerts c.f. 17 09 04	✓		
17 05 03* soils and stones containing dangerous substances				✓
17 05 04 soils and stones other than those mentioned in 17 05 03	Soil and stones only (excluding top soil, peat, soil and stones from contaminated sites)	✓		
17 06 05* Construction materials containing asbestos	e.g., corrugated asbestos sheeting			✓
17 08 02 Gypsum-based construction materials other than those mentioned in 17 08 01	Plaster & plasterboard (although specific disposal requirements are required for high sulphate waste – see EA guidance 'Understanding the Landfill Directive' version 1.0 March 2010.		✓	

17 09 01* Construction & demolition wastes containing mercury				✓
17 09 02* Construction & demolition wastes containing PCBs	Waste with more than 50 mg/kg of PCB's are hazardous			✓
17 09 03* Other mixed construction & demolition wastes containing dangerous substances	Broad range of potentially (see notes below – if asterix the waste is hazardous) hazardous wastes			✓
17 09 04 Mixed construction & demolition wastes other than those mentioned in 17 09 01, 17 09 02 & 17 09 03	Mixed inerts with soil, tarmac, cables, vegetation, plaster, etc. (this waste can only be considered inert if it passes the waste acceptance criteria identified in the regulations).	✓	✓	

Note: all wastes with an asterix code are hazardous regardless of whether they are mirror or absolute entries in the EWC list the decision to with regard to composition must come before applying the code for mirror entries.

Some materials are classified as Inert Waste based in its origin (e.g., 17 01 01 Concrete, or glass) without any requirement for laboratory chemical analysis.

However, most soils will require laboratory testing to confirm whether they are classified as Hazardous Waste. The protocol for assessing these materials and the appropriate threshold values is complicated and are set out in the Environment Agency's "Technical Guidance *WM3* Hazardous Waste – Interpretation of the Definition and Classification of Hazardous Waste" (2015). If the test results for the waste indicates that it is not hazardous then further analysis of the waste is required to determine whether it is Inert Waste. If the waste does not meet the criteria for either Hazardous or Inert, then it is by default classified as Non-hazardous Waste.

As an alternative location to landfills for off-site disposal of inert and non-hazardous waste, there are a number of sites which have Waste Permit Exemptions that can accept certain categories of inert and non-hazardous wastes. Additionally, some quarries can accept certain types of wastes to be used for quarry restoration material. For both alternatives to disposal at landfill sites the material still requires chemical testing as these sites have site specific acceptance criteria for wastes. It should also be noted that these types of sites do not incur landfill tax which in the 2018/19 tax year is £2.80 for inactive waste (inert and some types of non-hazardous waste) and £88.95/Tonne for active waste (some types of non-hazardous waste and hazardous waste. Note that the Inland Revenue uses a different classification scheme for waste for tax purposes to the European Waste Classification scheme.

Waste Categorisation

The process of determining the category of wastes is a three-stage process:

- Stage 1 – is the waste either Hazardous or Inert by definition without the requirement for chemical analysis (if it is then Stages 2 and 3 are not required);

- Stage 2 - Waste characterisation;
- Stage 3 - WAC classification.

Waste characterisation determines if a waste is hazardous or not. Excavated soil is characterised using a system based on the contaminants present and their hazardous properties. The system uses total concentrations of the contaminants. Thresholds (as a percentage of the waste) have been set for the various hazardous properties.

Fourteen hazardous properties together with other scenarios where material could cause a hazard have been defined:

- Hazardous properties: explosive, oxidising, highly flammable/flammable, irritant, harmful, toxic, carcinogenic, corrosive, infectious, toxic for reproduction, mutagenic and ecotoxic;
- Substances which can release toxic/very toxic gases in contact with water, acid or air;
- Substances which, after disposal, can yield another substance, e.g., a leachate, which possesses any of the above hazardous properties.

Some of the hazardous properties are sub-divided e.g., there are three categories of carcinogenic, mutagenic and toxic for reproduction substances. The hazardous properties were originally defined in the European Hazardous Waste Directive 91/689/EC. Should a waste contain a contaminant with one or more of the listed hazardous properties at a concentration equal to or above the threshold value for the particular property, then the waste is hazardous. The hazardous properties of a wide range of chemicals are sourced from CLP 2015.

There are many reasons why waste soil is classified as being hazardous, but the majority of reasons can be divided into the following four groups:

- Hydrocarbons – this is probably the most common reason for the hazardous classification of soils. For most soils hydrocarbon analysis will be required for both Polycyclic Aromatic Hydrocarbons (PAH) and speciated Petroleum Hydrocarbons (PHCs) but depending on the site's history other groups of organic contaminants may also be is included in any analysis suite for soil samples;
- Metals – Particularly sites from former metal processing or mining sites and also some types of ash have metal concentrations that are sufficiently high to characterise materials requiring disposal as hazardous waste.
- Asbestos;
- Anions – e.g., sulphate in plasterboard (there are special disposal requirements for high sulphate waste and specific WAC requirements); it is possible that sulphate salts of metals and semi-metals could make the waste hazardous – the sulphate concentration could possibly be significant under H12, H13 and H14.

The characterisation of wastes with significant metal concentrations involves some processing of the analysis data. The chemical analysis results for inorganic substances are generally reported as total concentrations e.g., total lead, total arsenic, total sulphate etc. However, CLP 2015 deals with the hazardous properties of actual compounds e.g., lead sulphate, arsenic pentoxide, nickel carbonate. Therefore, the total metal results have to be converted into assessed chemical analysis results for the compound most likely to be present in the soil samples. For example, if the sample contains high total lead concentrations and high sulphate concentrations, then the lead is likely to be present in the soil as lead sulphate. The most likely compounds can often be determined from a desk study or previous site uses. If the site has been derelict for a number of years, consideration should be given as to whether water soluble compounds should or should not be chosen, as rainfall could have removed them from the soil (this does not apply if the soil has been taken from below under a concrete slab etc). Chemical knowledge and common sense needs to be used in choosing a suitable compound.

If no data is available, then a worst-case scenario has to be assumed and the most hazardous compound likely to be present has to be chosen. For example, metal chromates (lead chromate, nickel chromate) are often the most hazardous compounds formed by many metals, but if the chromium concentrations in the soil are low, chromates are unlikely to be present. It should also be noted that for many of the hazard categories, the cumulative hazard from different compounds is added (e.g., add the concentrations of the copper, lead and zinc compounds together to assess the Hazard Category H14 Ecotoxicity).

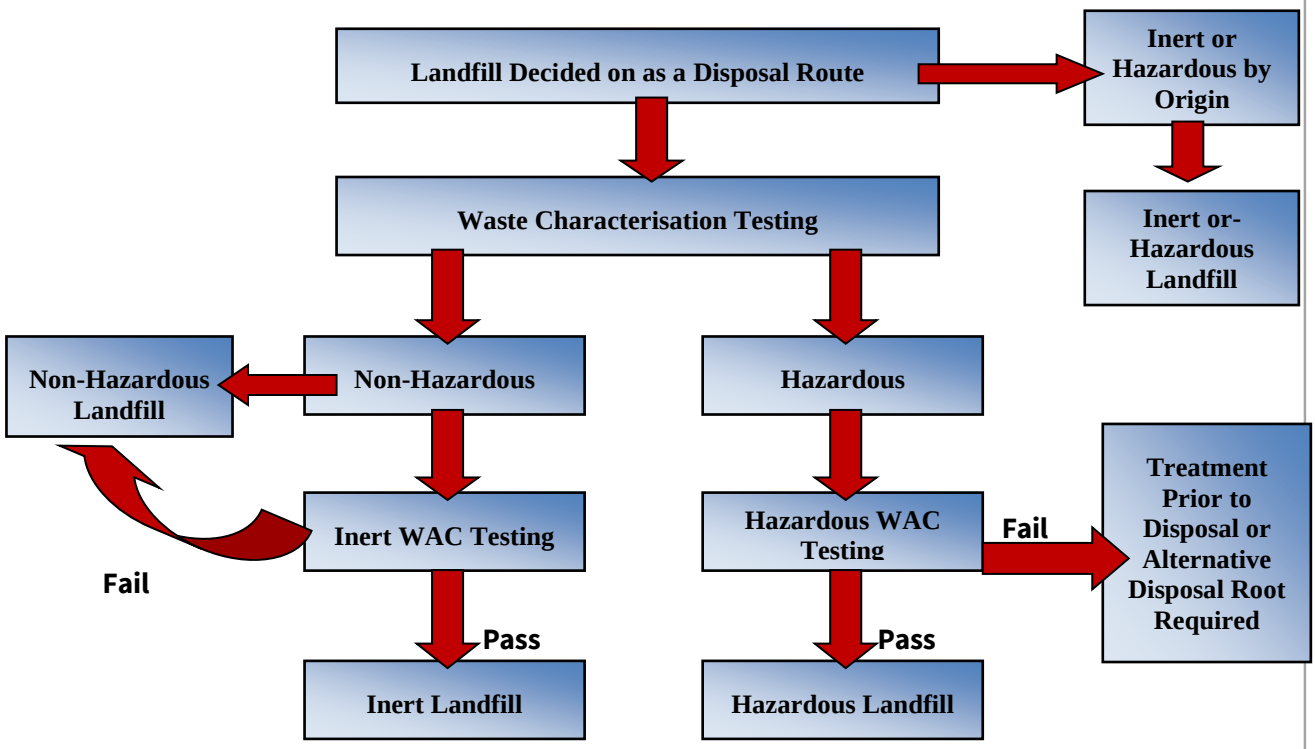
If the results of the above assessment determine that the waste is hazardous, it must then be analysed for the Waste Acceptance Criteria (WAC) analysis contained within appropriate Environmental Permitting Regulations (this comprises mainly leachate but also analysis for TOC and Loss on ignition). WAC limit values have been set for the listed determinands. If any of the determinands exceed their limit value, the waste must be pre-treated to reduce concentrations to below the limit values before the waste may be disposed of at a landfill site licensed to take hazardous waste.

For waste classified as not being hazardous, then there are two options available. Currently, waste correctly characterised as not being hazardous may be disposed of without WAC testing to a non-hazardous landfill. Alternatively, WAC testing for Inert Waste can be carried out (this is similar to the list for hazardous waste with the addition of PAH's, BTEX and Mineral Oil). If the results pass the Inert WAC criteria it can be disposed of at an Inert Waste Landfill. If any of the WAC test results exceed the Inert WAC criteria the waste has to be disposed at a non- hazardous landfill. There are WAC limits for non-hazardous waste set for pH and TOC. If these two criteria are not met then the waste must be pre-treated to so that it meets the criteria before it can be disposed.

If materials fail the WAC criteria it may be possible to pre-treat the waste on-site or be taken to a soil treatment centre for pre-treatment to reduce the soil's hazardous properties (e.g., by bioremediation of hydrocarbons).

It should be noted that in order to dispose of Hazardous Waste, the site must register as a producer of Hazardous Waste with the Environment Agency. When disposing of waste materials to landfill sites the appropriate Duty of Care Waste Transfer procedures must be followed.

Landfilled Waste Decision Tree



Landfill Tax

It should be noted that HM Revenue and Customs (HMRC) classify wastes for tax purposes using a different scheme to the threefold landfill EU Landfill Directive scheme (i.e., the hazardous, non-hazardous and inert). HMRC have a two-fold system for landfill tax. The Standard Landfill Tax is currently £88.95/T and applies to all wastes unless they qualify for the reduced rate of landfill tax of £2.80/T. The wastes that qualify for the reduced rate of Landfill Tax are set out in The Landfill Tax (Qualifying Material) Order 2011 with supplementary information on the interpretation of these regulations in HMRS "Notice LFT1 – A General Guide to Landfill Tax" (May 2012) and HMRC Briefing Notes 15/12 and 18/12.

Appendix N – Current Guidance for Ground Gas Risk Assessment

Guidance for Classification of Soil for Off Site Disposal at a Landfill Site

Many site developments create a portion of excess soils and Made Ground which if not re-usable, are required to be disposed off-site at a suitably licensed landfill site. The regulations and associated guidance published by the Environment Agency is relatively complex and lengthy. This guidance provides a summary of the following documents which should be referred to when assessing soil (and common constituents found within Made Ground on remediation sites) for off-site disposal:

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It is important to distinguish between the waste classification system and the designation of materials as "suitable for use" on site. A material may be retained on site for an appropriate end use if that end-use is clearly designated and that a site-specific risk assessment ensures that it does not pose a risk to human health or controlled waters. However, if this material is excavated and sent for disposal, the material is then subject to waste management regulations and the two systems cannot be directly correlated. It is therefore important to note that classifying a material as hazardous (should it be excavated and become a waste) does not necessarily indicate that it might not be suitable to be kept on site for re-use. Separate guidance in the form of a Code of Practice (CL:AIRE Version 2, 2011) has been developed jointly between the development industry and the Environment Agency to provide best practice when assessing whether materials are wastes or not, and for determining when waste can cease to be waste for a particular use.

In accordance with the current waste regulations (or Landfill Directive, as they are more commonly known), from 30th October 2007 all waste materials produced from construction sites have to be pre-treated prior to disposal. Pre-treatment includes waste minimisation, recovery (e.g., separation of demolition waste to be used as hardcore) and separation of materials into different waste categories (e.g., separate inert waste from hazardous waste etc). Mixing of different waste types shall be avoided and intentional mixing of inert materials with hazardous waste to 'dilute it' and hence change its waste classification, is illegal.

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hazardous. Landfills are licensed to take wastes based on a three-tier classification system with the non- hazardous waste divided into two sub-categories:

- Non-Hazardous - inert;
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		Inert Waste	Non-Hazardous	Hazardous Waste
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17 01 06* Mixtures of concrete, bricks, tiles & ceramics containing dangerous substances	These are not normally considered hazardous but if they are contaminated (e.g., by asbestos) then could be hazardous – see comment above			✓
17 01 07 Mixtures of concrete, bricks, tiles & ceramics other than those in 17 01 06	This is mixed inerts c.f. 17 09 04	✓		
17 05 03* soils and stones containing dangerous substances				✓
17 05 04 soils and stones other than those mentioned in 17 05 03	Soil and stones only (excluding top soil, peat, soil and stones from contaminated sites)	✓		
17 06 05* Construction materials containing asbestos	e.g., corrugated asbestos sheeting			✓
17 08 02 Gypsum-based construction materials other than those mentioned in 17 08 01	Plaster & plasterboard (although specific disposal requirements are required for high sulphate waste – see EA guidance 'Understanding the Landfill Directive' version 1.0 March 2010.		✓	

17 09 01* Construction & demolition wastes containing mercury				✓
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17 09 03* Other mixed construction & demolition wastes containing dangerous substances	Broad range of potentially (see notes below – if asterix the waste is hazardous) hazardous wastes			✓
17 09 04 Mixed construction & demolition wastes other than those mentioned in 17 09 01, 17 09 02 & 17 09 03	Mixed inerts with soil, tarmac, cables, vegetation, plaster, etc. (this waste can only be considered inert if it passes the waste acceptance criteria identified in the regulations).	✓	✓	

Note: all wastes with an asterix code are hazardous regardless of whether they are mirror or absolute entries in the EWC list the decision to with regard to composition must come before applying the code for mirror entries.

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- Substances which can release toxic/very toxic gases in contact with water, acid or air;
- Substances which, after disposal, can yield another substance, e.g., a leachate, which possesses any of the above hazardous properties.

Some of the hazardous properties are sub-divided e.g., there are three categories of carcinogenic, mutagenic and toxic for reproduction substances. The hazardous properties were originally defined in the European Hazardous Waste Directive 91/689/EC. Should a waste contain a contaminant with one or more of the listed hazardous properties at a concentration equal to or above the threshold value for the particular property, then the waste is hazardous. The hazardous properties of a wide range of chemicals are sourced from CLP 2015.

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- Metals – Particularly sites from former metal processing or mining sites and also some types of ash have metal concentrations that are sufficiently high to characterise materials requiring disposal as hazardous waste.
- Asbestos;
- Anions – e.g., sulphate in plasterboard (there are special disposal requirements for high sulphate waste and specific WAC requirements); it is possible that sulphate salts of metals and semi-metals could make the waste hazardous – the sulphate concentration could possibly be significant under H12, H13 and H14.

The characterisation of wastes with significant metal concentrations involves some processing of the analysis data. The chemical analysis results for inorganic substances are generally reported as total concentrations e.g., total lead, total arsenic, total sulphate etc. However, CLP 2015 deals with the hazardous properties of actual compounds e.g., lead sulphate, arsenic pentoxide, nickel carbonate. Therefore, the total metal results have to be converted into assessed chemical analysis results for the compound most likely to be present in the soil samples. For example, if the sample contains high total lead concentrations and high sulphate concentrations, then the lead is likely to be present in the soil as lead sulphate. The most likely compounds can often be determined from a desk study or previous site uses. If the site has been derelict for a number of years, consideration should be given as to whether water soluble compounds should or should not be chosen, as rainfall could have removed them from the soil (this does not apply if the soil has been taken from below under a concrete slab etc). Chemical knowledge and common sense needs to be used in choosing a suitable compound.

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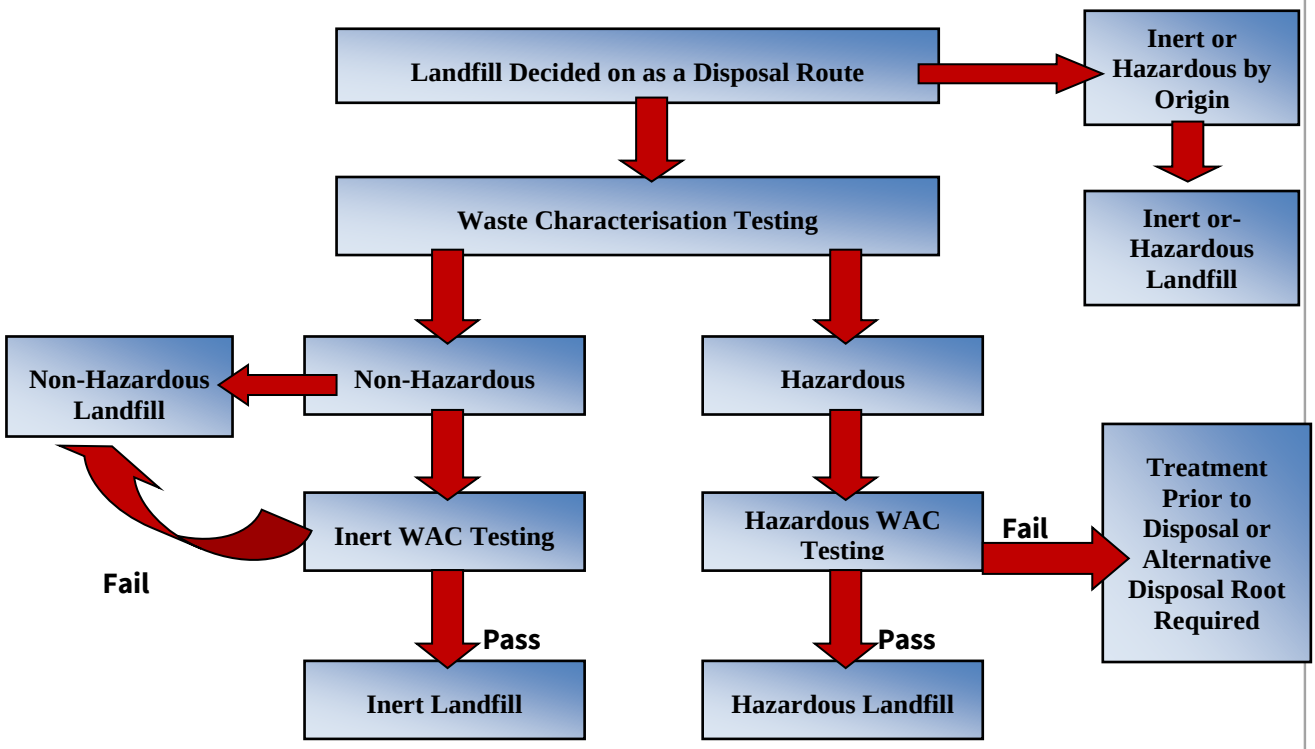
If the results of the above assessment determine that the waste is hazardous, it must then be analysed for the Waste Acceptance Criteria (WAC) analysis contained within appropriate Environmental Permitting Regulations (this comprises mainly leachate but also analysis for TOC and Loss on ignition). WAC limit values have been set for the listed determinands. If any of the determinands exceed their limit value, the waste must be pre-treated to reduce concentrations to below the limit values before the waste may be disposed of at a landfill site licensed to take hazardous waste.

For waste classified as not being hazardous, then there are two options available. Currently, waste correctly characterised as not being hazardous may be disposed of without WAC testing to a non-hazardous landfill. Alternatively, WAC testing for Inert Waste can be carried out (this is similar to the list for hazardous waste with the addition of PAH's, BTEX and Mineral Oil). If the results pass the Inert WAC criteria it can be disposed of at an Inert Waste Landfill. If any of the WAC test results exceed the Inert WAC criteria the waste has to be disposed at a non- hazardous landfill. There are WAC limits for non-hazardous waste set for pH and TOC. If these two criteria are not met then the waste must be pre-treated to so that it meets the criteria before it can be disposed.

If materials fail the WAC criteria it may be possible to pre-treat the waste on-site or be taken to a soil treatment centre for pre-treatment to reduce the soil's hazardous properties (e.g., by bioremediation of hydrocarbons).

It should be noted that in order to dispose of Hazardous Waste, the site must register as a producer of Hazardous Waste with the Environment Agency. When disposing of waste materials to landfill sites the appropriate Duty of Care Waste Transfer procedures must be followed.

Landfilled Waste Decision Tree



Landfill Tax

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Appendix O – Unforeseen Ground Contamination

Unforeseen Ground Contamination

There is the potential for areas of previously unexpected contamination to be present, as is the case with any "brownfield" site. Any significant quantities of asbestos, significant ashy soils, unusual, brightly coloured or significantly oily or odorous material should be considered in this category. If unexpected contamination is found the following procedures should be adhered to:

1. All site works at the position of the suspected contamination will cease.
2. A suitably trained geo-environmental specialist should assess the visual and olfactory observations of the condition of the ground and the extent of contamination, and the Client and the Local Authority should be informed of the discovery. Should the contamination be likely to affect controlled waters the Environment Agency shall also be informed.
3. The suspected contaminated material will be investigated and tested appropriately in accordance with the assessed risks. The investigation works will be carried out in the presence of a suitably qualified geo-environmental engineer. The investigation works shall commence to recover samples for testing and, using visual and olfactory observations of the condition of the ground, delineate the area over which contaminated materials are present.
4. The unexpected, contaminated material will either be left in situ or be stockpiled whilst testing is carried out and suitable assessments completed to determine whether the material can be re-used on site or requires to be disposed as appropriate.
5. Where the material is left in situ awaiting results it will be reburied or covered with plastic sheeting.
6. Where the potentially contaminated material is to be temporarily stockpiled it will either be placed either on a prepared surface of clayey Alluvium, or on 2000-gauge Visqueen sheeting (or other impermeable surface) and covered to prevent dust and odour emissions.
7. Any areas where unexpected visual or olfactory ground contamination will be surveyed, a photographic record kept, and testing results incorporated into the Verification Report.
8. A photographic recorded will be made of relevant observations.
9. The testing suite will be determined by the independent geo-environmental specialist on the basis of visual and olfactory observations.
10. Test results will be compared against current assessment criteria suitable for the future use of the area of the site affected.
11. The results of the investigation and testing of any suspect unexpected contamination will be used to determine the relevant actions. After consultation with the Local Authority and if necessary the Environment Agency, materials should either be:
    - re-used in areas where test results indicate that it meets compliance targets so it can be reused without treatment; or
    - treatment of material on site to meet compliance targets so it can be reused; or

- removal from site to a treatment centre or to a suitably licensed landfill or permitted treatment facility.

12. Verification Report will be produced for the work.

Asbestos

Asbestos cement products and asbestos fibres have not been encountered in the soils at the site but based on the age of the Made Ground material containing asbestos could be expected to be encountered. If non-notifiable asbestos (e.g., chrysotile asbestos cement board) is encountered in excavations then it will be dealt with in accordance with the Control of Asbestos Regulations 2012 (CAR 2012) and the HSE's ACoP for asbestos (2013). Finding non-notifiable asbestos is a very common occurrence on brownfield sites and is a relatively low risk activity and can be dealt with as a matter of routine. Therefore, it is not proposed that the Council will be notified but an appropriate record will be kept of confirmatory testing and disposal. This will be included in remediation verification reports.

If suspect notifiable asbestos is encountered then the Council and the HSE will be notified. An appropriate action plan will be agreed with the Council and the HSE in accordance with CAR 2012. The action plan will include the preparation of the Risk Assessment and Plan of Work in accordance with CAR and other statutory requirements including:

- Site mobilisation;
- Excavation methodology;
- Handling, movement and storage on-site of excavation arisings;
- Any processing of excavation arisings containing ACMs;
- Movement and placement of arisings to final destination;
- Placing of cover system over soils with and ACMs remaining on-site;
- Off-site disposal of ACMs;
- Licences;
- PPE & RPE; and,
- Dust and fibre monitoring.

Potential mitigation measures that would be required include:

- Ensuring works are carried out by suitably trained and experienced personnel with working with asbestos;
- Site investigation and risk assessment;
- Removal or treatment of asbestos hotspots;
- Use of PPE and RPE by construction workers; and,

- Compliance monitoring.

Unexpected Tanks

No buried underground fuel storage tanks have been encountered during the site investigation works; however, there remains a low risk that tanks are present on-site. Should an underground tank be encountered, operations should cease in the area. Additionally, there may be pipework associated with these tanks which could have oily residues. The following procedures are to be adhered to if tanks and pipework are identified:

1. All site works at the position of the tanks/pipework should stop.
2. A description of the tank should be made by the geo-environmental engineer including; condition and surround, along with visual and olfactory observations should any contents in the tank be apparent. A photographic recorded will also be made of relevant observations.
3. The tank's position and depth should be determined and marked on a plan of the site.
4. The independent geo-environmental engineer will inform Client and the Local Authority.
5. During the presence of the independent geo-environmental engineer, investigation works should be undertaken to obtain samples of any liquid or sludge contents and to establish dimensions of the tank.
6. Testing will be determined on the basis of visual and olfactory observations by independent geo-environmental engineer.
7. Test results will be compared against current assessment criteria and proposals for disposal of any contents determined in agreement with the appropriate Regulatory Parties.
8. Emptying the tank and disposal of contents to a suitable licenced disposal facility.
9. Degassing and removal of the tank by a suitably qualified contractor will be required, and a Naked Flame Certificate should be provided.
10. Once the tank has been emptied in accordance with the above proposals, it is to be removed for disposal to a licensed waste management facility. Copies of the relevant waste consignment notes are to be kept and included in the Verification Report.
11. Excavation and remediation of any contaminated soils around the tank will be carried out.
12. Samples of the base and sides of the resultant hole will be sampled and supervised by the independent geo-environmental engineer to confirm whether risks to human health or controlled waters.

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